

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A device for mixing two fluids and distributing said mixture, ~~comprising characterized in that it comprises~~ a chamber (110) supplied with a liquid first fluid, said chamber being filled with said first fluid, and a series of tubes or conduits (108) traversing said chamber in a substantially vertical direction and supplied with a an essentially gaseous second fluid, said tubes being perforated by lateral orifices distributed over a plurality of levels allowing said tubes to communicate with said chamber, said tubes ~~being characterized by~~ having a diameter d_c in the range 3 to 100 mm for a surface velocity of the first fluid in the range 0.1 to 100 cm/s, said tubes also ~~being characterized in that the~~ having a distance of more than 50 mm between ~~the~~ orifices located at the lowest level with respect to the direction of flow of the fluid or fluid mixture at the tube outlet ~~is more than 50 mm.~~

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15. (Previously Presented) A device according to claim 1, in which the tubes (108) extend below the lower level of the chamber (110) by a distance H_t , being in the range of 10 to 50 mm.
16. (Previously Presented) A device according to claim 1, in which the distance between the level of the tube (108) outlet and an upper surface of a bed located below the device is in the range of 0 to 50 mm.
17. (Previously Presented) A device according to claim 1, comprising the tubes or conduits in a concentration of more than 80 conduits per m^2 .
18. (Previously Presented) A device according to claim 1, located upstream of a catalytic bed or at a reactor head.
19. (Previously Presented) A device according to claim 1, said device being located upstream of a bed of granular solids.
20. (Previously Presented) A device according to claim 1, further supplied with means for injecting the first fluid into the chamber laterally with respect to said device.
21. (Previously Presented) A device according to claim 1, located downstream of a bed of granular solids.
22. (Currently Amended) A reactor comprising a reactor head and at least one device according to claim 1, ~~to mix and distribute two fluids,~~ and further comprising at least one bed of

granular solids downstream of said device, and means for introducing the first fluid directly into the chamber (110) for introducing the second fluid introduced upstream of said device.

23. (Previously Presented) A reactor according to claim 22, comprising a buffer drum located upstream of the reactor head and outside the reactor, connected with the device via lines (12, 13) to allow material exchange between the liquid phase and the gas phase, said lines allowing separate injection into the mixing device of an essentially liquid phase containing dissolved gas and of an essentially gaseous phase containing liquid respectively, said essentially liquid and essential gaseous phases resulting from prior contact of the liquid and gas phases in said buffer drum.

24. (Previously Presented) A reactor according to claim 22, comprising means for circulating the two fluids in a co-current dropper mode through said bed or beds of granular solids.

25. (Previously Presented) A process comprising conducting a hydrodesulphurisation, selective hydrogenation or hydrodenitrogenation reaction in a reactor according to claim 22.

Please add the following new claims:

--26. (New) A device according to claim 18, located at the head of a hydrocracking, hydrotreatment, hydrodesulphurisation or C2 to C5 cut selective hydrogenation reactor.

27. (New) A device according to claim 1, wherein the first fluid consists essentially of hydrocarbons, and the essentially gaseous second fluid is hydrogen.

28. (New) A device according to claim 26, wherein the first fluid consists essentially of hydrocarbons, and the essentially gaseous second fluid is hydrogen.

29. (New) A device for mixing two fluids and distributing said mixture, comprising a chamber (110) supplied with a liquid first fluid consisting essentially of hydrocarbons, said chamber being filled with said first fluid, and a series of tubes or conduits (108) traversing said chamber in a substantially vertical direction and supplied with an essentially gaseous second fluid consisting essentially of hydrogen, said tubes being perforated by lateral orifices distributed over a plurality of levels allowing said tubes to communicate with said chamber, said tubes having a diameter d_c in the range 3 to 100 mm for a surface velocity of the first fluid in the range 0.1 to 100 cm/s, said tubes also having a distance of more than 50 mm between orifices located at the lowest level with respect to the direction of flow of the fluid or fluid mixture at the tube outlet, said device being located at the head of hydrocracking, hydrotreatment, hydrodesulphurization or C2 to C5 cut selective hydrogenation reactor.

30. (New) A device for mixing two fluids and distributing said mixture, comprising a chamber (110) supplied with a first fluid, said chamber being filled with said first fluid, and a series of tubes or conduits (108) traversing said chamber in a substantially vertical direction and supplied with a second fluid, said tubes being perforated by lateral orifices distributed over a plurality of levels allowing said tubes to communicate with said chamber, said tubes being characterized by a diameter d_c in the range 3 to 100 mm for a surface velocity of the first fluid in the range 0.1 to 100 cm/s, said tubes also being characterized in that the distance between the orifices located at the lowest level with respect to the direction of flow of the fluid or fluid mixture at the tube outlet is more than 50 mm, wherein said device is located upstream of a catalytic bed or at a reactor head.

31. (New) A device according to claim 30, located at the head of a hydrocracking, hydrotreatment, hydrodesulphurisation or C2 to C5 cut selective hydrogenation

reactor.--